U.S. Department of Energy
Energy Efficiency and Renewable Energy
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Wind Energy Program Technology Portfolio

Low Wind Speed Technology Phase II: Sweep-Twist Blade Design and Fabrication with Atmospheric Test Verification

Knight & Carver

Project Description: Knight and Carver will develop a sweep-twist adaptive blade (approximately 28 m long) to reduce operating loads and allow a larger, more productive rotor. The blade design will use outer blade sweep to create twist coupling without angled fiber. This concept has potentially significant cost and manufacturing advantages. After the design phase, several prototypes blades will be built using a unique fabrication process. Following static and fatigue tests, three blades will be flight tested on an existing 750-kW turbine and resulting data will be compared to the baseline.

The initial mold fabrication for Knight and Carver's sweep twist blade.

Project Type: Component Development
Total Project Budget: $2,856,154
Industry Cost Share: $856,846
DOE Cost Share: $1,999,308
Planned Project Duration: December 2004-July 2008

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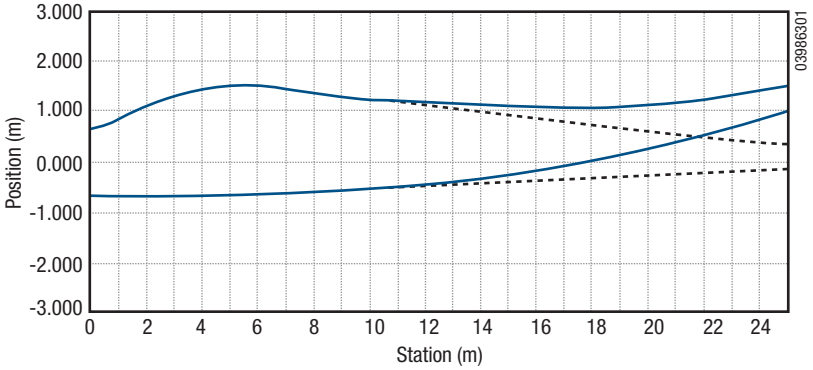
Current Status: In Progress



Planform of the sweep twist blade.

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